



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,247	04/26/2006	Ken Matsubara	AI 410NP	4802
23995	7590	07/21/2009	EXAMINER	
RABIN & Berdo, PC 1101 14TH STREET, NW SUITE 500 WASHINGTON, DC 20005			WILLIAMS, MAURICE L	
			ART UNIT	PAPER NUMBER
			3611	
			MAIL DATE	DELIVERY MODE
			07/21/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,247	Applicant(s) MATSUBARA, KEN	
	Examiner MAURICE WILLIAMS	Art Unit 3611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 21 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 21 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 21 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 21 have been amended to include the statement 'the end of the unitary shaft is press-fitted in the concave portion;' however, this claim element is already provided in both claims (ln. 20-21 of both claims). This additional portion is repetitive and appears to claim another shaft.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9, 13, 14, 21 and 24 are rejected under 35 U.S.C. 103(a) as being anticipated by Shimizu (US 6,838,844) in view of Chikaraishi (US 2005/0133297).

Shimizu discloses an electric power steering device comprising:

A steering assist electric motor (**19**) with a rotation shaft (**48**);

a speed reduction mechanism (**18**);

a motor housing (**58**);

Art Unit: 3611

a stator (**54**) fixed to the motor housing;

a rotor (**52**) co-rotatable with the rotation shaft, having a body and magnet (col. 7, ln. 63);

a rotation angle detection means with a movable member (**23a**) and a stationary member (**23b**), which has an annular shape fixed to the housing (Fig. 4).

The motor housing includes a tubular body having first and second ends and an opening provided at the first end and an end cover (shown attached to housing in Fig. 4, bottom of page) attached to the first end to close the opening at the first end, and the stationary portion of the rotation angle detecting means is fixed to the end cover (Fig. 4).

An annular power supply member (**53**) is attached to the first end of the motor housing body, and the rotation angle detecting means is disposed radially inward of the power supply member (Fig. 4 shows that **23** is disposed radially inwardly of **53**, as the elements are concentric and **23** has a smaller radius).

The movable portion of the rotation angle detecting means includes a reference portion with projections provided the outer periphery serving as a reference (col. 8, ln. 11-14) for defining magnetized portions of the rotor magnet and for magnetizing the magnetizable member as a production intermediate member for the rotor magnet. The rotor body (**51**) includes an outer tubular portion (in contact with **52**) to which the rotor magnet is fixed, a shaft portion (the proximal end of **52**) provided coaxially with the outer tubular portion and retaining the movable portion of the rotation angle detecting means (Fig. 4 shows that **23** is disposed on the end of **51**), and a connection portion (shown in

Art Unit: 3611

the transition between the tubular portion and the proximal end of **51**) which connects the outer tubular portion and the shaft portion.

The rotor magnet has an outer tubular portion (**52**) with a first engagement portion on an outer peripheral surface thereof for engagement with the rotor magnet fitted around the tubular outer portion (Fig. 4).

The shaft portion has an engagement portion for engagement with the movable portion of the rotation angle detecting means (Fig. 4, shown on the distal end of **51**). The shaft portion has a coupling portion for coupling the rotation shaft of the electric motor to the shaft portion (Fig. 4, shaft portion is shown disposed inside the electric motor).

The unitary shaft includes a first end portion (**12**), a second end portion (**15**), and an intermediate portion between the first and second end portions (disposed inside housing **24**), and the intermediate portion of the unitary shaft is supported by a combination ball bearings in back-to-back relation (**41**, **42**).

The motor housing has a tubular body (**58**) having a first end (holding **23** as seen at the bottom of Fig. 4, affixed by a bolt) which is far from the speed reduction mechanism, relative to the second end.

Shimizu does not directly disclose a shaft having a concave portion into which a shaft is press-fit. Chikaraishi discloses a motor wherein a shaft (**35**) is press-fit into a concave portion (**115**) of another shaft (Figs. 31,32). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Shimizu as taught by Chikaraishi in order to make it possible to replace a single component upon failure.

5. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being anticipated by Shimizu in view of Chikaraishi as applied to claim 9 above, further in view of Cheng (US 6,164,407). Shimizu and Chikaraishi disclose as discussed above, but does not directly disclose an end cover that is circumferentially adjustable to a motor housing body. Cheng discloses a motor cover (**70**) that is adjustable with respect to a motor housing by means of a screw (**130**) and an insertion hole with an arcuate shape (**88**). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Shimizu as taught by Chikaraishi and Cheng in order to allow the position of the motor cover to be adjusted to the optimal position during assembly.

6. Claims 15-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu in view of Chikaraishi and Naito (US 4,798,253). Shimizu discloses ball bearings, as discussed above, but does not directly disclose that the ball bearings are angular ball bearings. Chikaraishi also discloses deep groove ball bearings (**43, 44**; ¶0094, ln. 9-10). Naito discloses angular ball bearings (**8, 9**; col. 3, ln. 67). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to incorporate angular ball bearings as taught by Naito in order to accommodate combined loads in both the radial and axial directions, and to provide deep groove ball bearings in order to accommodate higher loads.

Response to Arguments

7. Applicant's arguments filed 4/23/2009, regarding the rejections of claims 1 and 21, have been fully considered but they are not persuasive. Element **117** of Chikaraishi does qualify as a concave *portion*, as it is connected to the motor shaft **36** and has a concave area (**115**) for unitary shaft **37**.

8. Applicant's arguments, see Remarks, filed 4/23/2009, with respect to the rejection of claim 15 under § 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Naito.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAURICE WILLIAMS whose telephone number is (571)272-4263. The examiner can normally be reached on Monday - Friday, 8 a.m. - 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on (571) 272-6651. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Maurice Williams/
Examiner, Art Unit 3611

Maurice Williams
Examiner
Art Unit 3611

MLW
July 18, 2009

/Lesley D. Morris/
Supervisory Patent Examiner, Art Unit 3611